

6001

ORRES CONTROL  
UTGOING LTR NO

91 RF 4555

# EG&G ROCKY FLATS

EG&G ROCKY FLATS, INC  
ROCKY FLATS PLANT, P O BOX 464 GOLDEN, COLORADO 80402-0464 • (303) 966 7000

July 26, 1991

91-RF-4555

Robert M Nelson, Jr  
Manager  
DOE, RFO

Attn John Rampe

## OUT-OF-SPECIFICATION SURFACE WATER SAMPLES - JMK-0407-91

Attached please find several Water Sample Reports and a map for surface water samples which were out-of-specification with respect to current standards for Americium-241. Listed below is a summary of the unvalidated data for these surface water stations. The reporting threshold designated by the Inter-agency Agreement (IAG) and the Colorado Water Quality Control Commission (CWQCC) is also listed.

Location	Sample Date	Analyte	Result (pCi/l)	Threshold Limit
A-3 Eff	5/15 - 17/91	Am-241	1096 ± 0550	05 pCi/l
A-3 Eff	5/18 - 19/91	Am-241	0983 ± NR	05 pCi/l
A-3 Eff	6/4 - 7/91	Am-241	200 ± NR	05 pCi/l
A-4 Eff	6/3 - 7/91	Am-241	1133 ± NR	05 pCi/l
W&I	5/4 - 5/91	Am-241	0651 ± 090	05 pCi/l
W&I	5/18 - 19/91	Am-241	0520 ± 0396	05 pCi/l
W&I	6/1 - 2/91	Am-241	0670 ± 0707	05 pCi/l

A-3 Pond and W&I are considered critical stations and are not NPDES monitoring points. A-4 Pond is considered a critical station and is an NPDES monitoring point. There has recently been a rash of out-of-specification events for americium at these locations. EMAD and CWAD have requested that these samples be rerun. EMAD has also requested a copy of the QA/QC data for these samples for further evaluation of the laboratory results.

The 123 Laboratory Pu and Am analysis method has recently changed (June 26, 1991) to state that the sample "must be shaken" before analysis. This is common practice in our offsite contract labs, but has been an inconsistent practice at 123 Laboratory. The Quality Assurance/Quality Control (QA/QC) data for recent 123 Laboratory samples out-of-specification with respect to americium, have unacceptable blanks. These high blank results indicate a laboratory method problem. 123 Laboratory personnel stated on July 11, 1991 that they have been experiencing detector contamination problems. This contamination problem decreases the sensitivity of the detector for determination of americium. The increased presence of sediment in these "shaken" samples, the high QA/QC blanks, and contaminated detectors could possibly account for the increase in Americium detection.

REVIEWED FOR CLASSIFICATION/UCM

By Bea Duran (u)

Date 8-16-93

A-0006-000172

ADMIN RECORD

DIST	LTH	UG
ETZKE JC		
JRUNGAME AH		
PP RD		
OUCHER, DW		
AVID JG		
ERED JE	X	
REDA, DW		
ARIS LR		
AKOR FJ		
ANCIS GE		
ODWIN R		
ALY TJ		
EKER EH		
NS JP		
ELE PB		
ASH JM	X	
BY WA		
KEBO JA		
E EM		
AESTIC JR		
ATHEWS TA		
UPPENS BE		
ORGAN RV	X	
ORTH P		
UMER LA		
OTTER GL	X	
ZZUTO VM		
ROADS JL	X	
APPELL BF		
VANSON ER		
IEBE JS		
UKINSON RB		
ILLIAMS RE		
ILSON JM		
XUNG ER		
ANE JO		
INDY MB	X	
JSBY WS	X	
VAN WD	X	
NGMAN JW	X	
NOBERG RD	X	
ORTER RG	X	
WITH DM	X	
J R Duck	X	
A. Dunstan	X	
D. Hobbs	X	
ORRES CONTROL	X	X
AFFIC		

CLASSIFICATION		
NI		
CLASSIFIED	X	X
CONFIDENTIAL		
CRET		

AUTHORIZED CLASSIFIER  
SIGNATURE

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TE 7/24/91  
IN REPLY TO LTR NO

APPROVALS  
[Signature] 7/24

ORIG & COPY INITIALS

Robert M Nelson, Jr

July 26, 1991

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Weather is another factor that should be considered Heavy rains can cause sediment to be suspended in the surface waters This suspended sediment could possibly explain the increased occurrence of americium at these stations

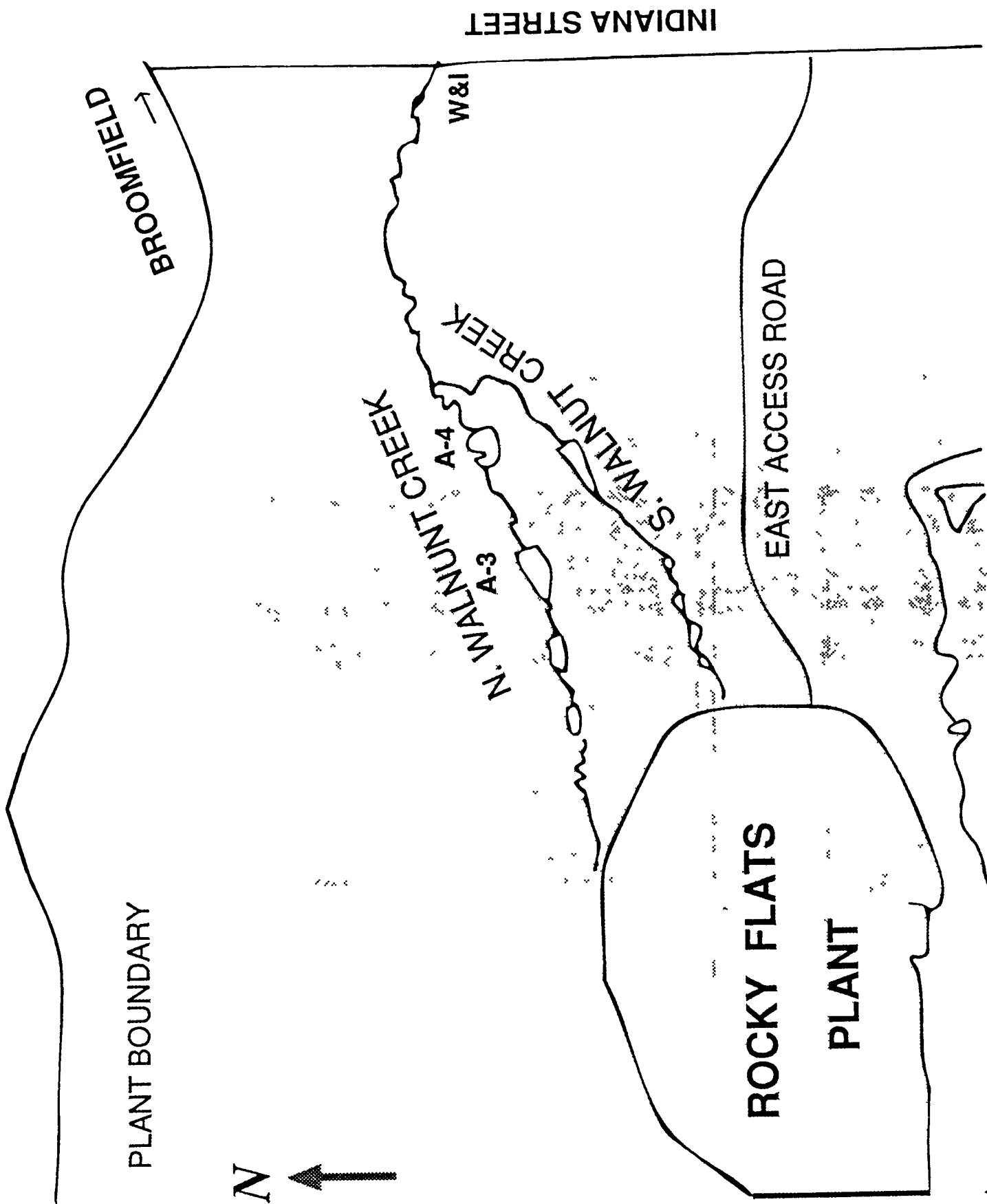


J M Kersh, Associate General Manager  
Environmental & Waste Management  
EG&G Rocky Flats, Inc

BAM nkg

Org and 1 cc - R M Nelson, Jr

Attachment  
As Stated



OUT OF SPECIFICATION  
WATER SAMPLE REPORT

Sample No NP56650WC Date May 15-17, 1991 Lab 123 Rad Health Lab

Location A-3 Pond Effluent

Map attached Yes

Quality Assurance Concerns. Data are not validated

<u>Parameter</u>	<u>Threshold Limit (pCi/l)</u>	<u>Result (pCi/l)</u>
Americium	0.05	0.1096 $\pm$ 0.0550

Source of Criterion IAG, CWQCC

Reporting Required? Yes Nature of Requirement. Critical Station

Location of nearest surface water. Walnut Creek Water Classification  
Segment 4

Source of observed results (if known). An appreciable amount of natural precipitation occurred on May 16, 1991. The pond volume rose 14.2% during the sampling period.

Current control/investigative actions

The sample is being rerun to determine if the results are due to laboratory error, and QA/QC data on this sample have also been requested.

Proposed control/investigative actions Further characterization of this area will be included as part of the characterization of Operable Unit 6, Walnut Creek.

Other comments. A-3 Pond discharges into A-4 Pond where it is treated before it is released off site. Radionuclides are not required NPDES discharge permit parameters.

Date of Report July-16-91

Preparer B. A. Montano

OUT OF SPECIFICATION  
WATER SAMPLE REPORT

Sample No. NP56692WC Date May 18-19, 1991 Lab 123 Rad Health Lab

Location. A-3 Pond Effluent

Map attached. Yes

Quality Assurance Concerns. Data are not validated

<u>Parameter</u>	<u>Threshold Limit (pCi/l)</u>	<u>Result (pCi/l)</u>
Americium	0.05	0.0983 ± NR*

\*NR is not reported

Source of Criterion IAG, CWQCC

Reporting Required? Yes Nature of Requirement Critical Station

Location of nearest surface water. Walnut Creek Water Classification  
Segment 4

Source of observed results (if known). The pond volume decreased 17.8%  
during the sampling period

Current control/investigative actions.

The sample is being rerun to determine if the results are due to laboratory error, and QA/QC data on this sample have also been requested

Proposed control/investigative actions Further characterization of this area will be included as part of the characterization of Operable Unit 6, Walnut Creek

Other comments A-3 Pond discharges into A-4 Pond where it is treated before it is released off site. Radionuclides are not required NPDES discharge permit parameters

Date of Report July-16-91

Preparer B A Montano

OUT OF SPECIFICATION  
WATER SAMPLE REPORT

Sample No NP56854WC Date June 4-7, 1991 Lab 123 Rad Health Lab

Location A-3 Pond Effluent

Map attached Yes

Quality Assurance Concerns. Data are not validated

<u>Parameter</u>	<u>Threshold Limit (pCi/l)</u>	<u>Result (pCi/l)</u>
Americium	0.05	0.200 ± NR*

\*NR is not reported

Source of Criterion IAG, CWQCC

Reporting Required? Yes Nature of Requirement. Critical Station

Location of nearest surface water. Walnut Creek Water Classification  
Segment 4

Source of observed results (if known). An appreciable amount of natural precipitation occurred both days prior to sample collection. A-3 Pond was being discharged to A-4 pond during the sampling period. The pond volume decreased 35.5% during the sampling period.

Current control/investigative actions

The sample is being rerun to determine if the results are due to laboratory error, and QA/QC data on this sample have also been requested.

Proposed control/investigative actions Further characterization of this area will be included as part of the characterization of Operable Unit 6, Walnut Creek.

Other comments A-3 Pond discharges into A-4 Pond where it is treated before it is released off site. Radionuclides are not required NPDES discharge permit parameters.

Date of Report July-16-91

Preparer B. A. Montano

OUT OF SPECIFICATION  
WATER SAMPLE REPORT

Sample No NP56848WC Date June 3-7, 1991 Lab 123 Rad Health Lab

Location A-4 Pond Effluent

Map attached Yes

Quality Assurance Concerns. Data are not validated

<u>Parameter</u>	<u>Threshold Limit (pCi/l)</u>	<u>Result (pCi/l)</u>
Americium	0.05	0.1133 ± NR*

\*NR is not reported

Source of Criterion IAG, CWQCC

Reporting Required? Yes Nature of Requirement. Critical Station and  
NPDES Discharge Point

Location of nearest surface water. Walnut Creek Water Classification  
Segment 4

Source of observed results (if known). Upstream surface water station, A-3 Pond, exhibited an elevated americium concentration. An appreciable amount of natural precipitation occurred both days prior to sample collection. The pond volume remained at 64% capacity during the sampling period. Possibly an analysis error.

Current control/investigative actions.

The sample is being rerun to determine if the results are due to laboratory error, and QA/QC data on this sample have also been requested.

Proposed control/investigative actions. Further characterization of this area will be included as part of the characterization of Operable Unit 6, Walnut Creek.

Other comments. Radionuclides are not required NPDES discharge permit parameters.

Date of Report July-16-91

Preparer B A Montano

OUT OF SPECIFICATION  
WATER SAMPLE REPORT

Sample No. NP56532WC Date May 4-5, 1991 Lab 123 Rad Health Lab

Location W&I (Walnut & Indiana) Map attached Yes

Quality Assurance Concerns. Data are not validated

<u>Parameter</u>	<u>Threshold Limit (pCi/l)</u>	<u>Result (pCi/l)</u>
Americium	0.05	0.0651 $\pm$ 0.090

Source of Criterion IAG, CWQCC

Reporting Required? Yes Nature of Requirement Critical Station

Location of nearest surface water. Walnut Creek Water Classification  
Segment 4

Source of observed results (if known). The elevated americium concentration at W&I could possibly come from upstream A-series Ponds, which have been reported with elevated americium concentrations

Current control/investigative actions

The sample is being rerun to determine if the results are due to laboratory error, and QA/QC data on this sample have also been requested

Proposed control/investigative actions

none

Other comments

none

Date of Report July-16-91

Preparer. B A Montano



OUT OF SPECIFICATION  
WATER SAMPLE REPORT

Sample No NP56691WC Date May 18-19, 1991 Lab 123 Rad Health Lab

Location W&I (Walnut & Indiana)

Map attached Yes

Quality Assurance Concerns Data are not validated

<u>Parameter</u>	<u>Threshold Limit (pCi/l)</u>	<u>Result (pCi/l)</u>
Americium	0.05	0.0520 $\pm$ 0.0396

Source of Criterion IAG, CWQCC

Reporting Required? Yes Nature of Requirement Critical Station

Location of nearest surface water Walnut Creek Water Classification  
Segment 4

Source of observed results (if known) The elevated americium concentration at W&I could possibly come from upstream A-series Ponds, which have been reported with elevated americium concentrations

Current control/investigative actions

The sample is being rerun to determine if the results are due to laboratory error, and QA/QC data on this sample have also been requested

Proposed control/investigative actions

none

Other comments

none

Date of Report July-16-91

Preparer B A Montano

OUT OF SPECIFICATION  
WATER SAMPLE REPORT

Sample No NP56778WC Date June 1-2, 1991 Lab 123 Rad Health Lab

Location W&I (Walnut & Indiana)

Map attached Yes

Quality Assurance Concerns Data are not validated

<u>Parameter</u>	<u>Threshold Limit (pCi/l)</u>	<u>Result (pCi/l)</u>
Americium	0.05	0.0670 $\pm$ 0.0707

Source of Criterion IAG, CWQCC

Reporting Required? Yes Nature of Requirement Critical Station

Location of nearest surface water Walnut Creek Water Classification  
Segment 4

Source of observed results (if known) An appreciable amount of natural precipitation occurred both days prior of sample collection. The elevated americium concentration at W&I could possibly come from upstream A-series Ponds, which have been reported with elevated americium concentrations.

Current control/investigative actions

The sample is being rerun to determine if the results are due to laboratory error, and QA/QC data on this sample have also been requested.

Proposed control/investigative actions

none

Other comments

none

Date of Report July-16-91

Preparer B A Montano